

Abstract of the Disclosure

A set of resistances for an exercise device such as a barbell or an exercise machine includes at least three different values of resistance. In one embodiment the resistances are weights distributed horizontally. The weights can have a binary distribution of resistances, 5 such as one or more five pound weights, one or more ten pound weights, one or more twenty pound weights, one or more forty pound weights, and one or more eighty pound weights. A selector is used to select various combinations of the weights to obtain the desired total resistance. In one embodiment, a controller operates the selector to change the weights in response to a predetermined condition, such as momentary muscular failure or the occurrence 10 of a manual change weight signal. The set of resistances is particularly useful for simplifying the automatic control of a weight stack, and for retrofitting existing machines and devices.